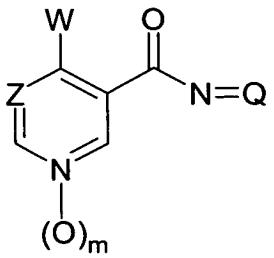
Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently amended) A compound of the formula (I):



(I)[[+]]

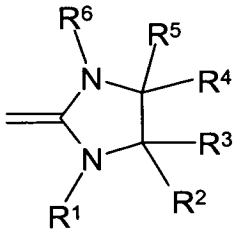
or a pesticidally acceptable salt thereof,

wherein:

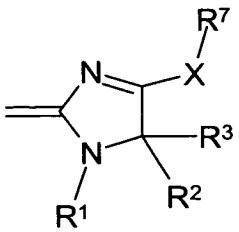
W is $(C_1\text{-}C_4)$haloalkyl;

Z is CH or N;

=Q is a group of formula (A) or (B):



(A)



(B)

R^1 and R^6 are each independently H, $(C_1\text{-}C_8)$alkyl, $(C_3\text{-}C_6)$alkenyl, $(C_3\text{-}C_6)$alkynyl, $(C_1\text{-}C_6)$alkoxy, $(C_3\text{-}C_6)$alkenyloxy, $(C_3\text{-}C_6)$alkynyloxy, $(C_1\text{-}C_6)$alkylamino, di-$(C_1\text{-}C_6)$alkylamino, $NHCO(C_1\text{-}C_6)$alkyl, $NHSO_2(C_1\text{-}C_6)$alkyl, $CO(C_1\text{-}C_6)$alkyl or

$SO_2(C_1\text{-}C_6)$alkyl, wherein any available carbon on R^1 and R^6 can be ~~which last twelve mentioned groups are~~ unsubstituted or substituted by one or more R^8 groups; or

R^1 and R^6 are $(C_3\text{-}C_8)$cycloalkyl or $(C_3\text{-}C_8)$cycloalkyl-$(C_1\text{-}C_6)$alkyl- which cycloalkyl radicals are unsubstituted or substituted by one or more $(C_1\text{-}C_6)$alkyl, $(C_1\text{-}C_6)$haloalkyl or R^8 groups; or

R^1 and R^6 are $-(CR^9R^{10})_pR^{11}$, $-(CR^9R^{10})_p$heterocyclyl, OH, SO_2R^{11}, NH_2, $NHCOR^{11}$, $NH(C_3\text{-}C_8)$cycloalkyl, $NH(CR^9R^{10})_sR^{11}$, $O(CR^9R^{10})_rR^{11}$, $-(CR^9R^{10})CO_2CH_2R^{11}$, $O(CH_2)_r$heterocyclyl, $N{=}C[(C_1\text{-}C_6)\text{alkyl}]_2$, COR^{11a} or CO-heterocyclyl; or

R^1 and R^6 are $(C_3\text{-}C_6)$alkenyl substituted by R^{11a};

R^2, R^3, R^4 and R^5 are each independently H, $(C_1\text{-}C_8)$alkyl, $(C_2\text{-}C_6)$alkenyl or $(C_2\text{-}C_6)$alkynyl, wherein any available carbon on R^2, R^3, R^4 or R^5 can be ~~which last three mentioned groups are~~ unsubstituted or substituted by one or more R^8 groups; or

R^2, R^3, R^4 and R^5 are $(C_3\text{-}C_8)$cycloalkyl or $(C_3\text{-}C_8)$cycloalkyl-$(C_1\text{-}C_6)$alkyl- which cycloalkyl radicals are unsubstituted or substituted by one or more $(C_1\text{-}C_6)$alkyl, $(C_1\text{-}C_6)$haloalkyl or R^8 groups; or

R^2, R^3, R^4 and R^5 are $(C_1\text{-}C_6)$alkyl-SH, $-(CR^9R^{10})_pR^{11}$, $-(CR^9R^{10})_p$heterocyclyl or $O(CH_2)_rR^{11}$;

or R^2 and R^3, or R^4 and R^5 together with the respective attached carbon atom form a carbonyl or thiocarbonyl group or a $(C_3\text{-}C_8)$cycloalkyl ring; or an imino group which is unsubstituted or substituted by $(C_1\text{-}C_6)$alkyl, $CO(C_1\text{-}C_6)$alkyl or R^{11a};

R^7 is $(C_3\text{-}C_6)$alkenyl, $(C_3\text{-}C_6)$alkynyl, $-(CR^9R^{10})_pR^{11}$, $-(CR^9R^{10})_p$heterocyclyl, $CO(C_1\text{-}C_6)$alkyl or a $(C_3\text{-}C_8)$cycloalkyl ring; or $(C_1\text{-}C_8)$alkyl unsubstituted or substituted by one or more radicals selected from halogen and $-OC(=O)\text{-}(C_1\text{-}C_4)$alkyl;

R^8 is halogen, $(C_1\text{-}C_6)$alkoxy, $(C_1\text{-}C_6)$haloalkoxy, $S(O)_nR^{12}$, CN, $CO_2(C_1\text{-}C_6)$alkyl, CO_2H, NO_2, OH, amino, $(C_1\text{-}C_6)$alkylamino, di-$(C_1\text{-}C_6)$alkylamino, carbamoyl, $(C_1\text{-}C_6)$-alkylcarbamoyl, di-$(C_1\text{-}C_6)$-alkylcarbamoyl, $CH[O(C_1\text{-}C_6)alkyl]_2$, $(C_3\text{-}C_6)$alkenyloxy, $(C_3\text{-}C_6)$alkynyloxy or $O(CH_2)_rR^{11}$;

R^9 and R^{10} are each independently H, $(C_1\text{-}C_6)$alkyl or $(C_1\text{-}C_6)$haloalkyl;

R^{11} is aryl unsubstituted or substituted by one or more radicals selected from the group consisting of $(C_1\text{-}C_6)$alkyl, $(C_1\text{-}C_6)$haloalkyl, $(C_2\text{-}C_6)$alkenyl, $(C_2\text{-}C_6)$alkynyl, $(C_3\text{-}C_8)$cycloalkyl, $-(CH_2)_uR^{11a}$, heterocyclyl, halogen, $(C_1\text{-}C_6)$alkoxy, $(C_1\text{-}C_6)$haloalkoxy, $S(O)_nR^{12}$, CN, $CO_2(C_1\text{-}C_6)$alkyl, NO_2, amino, $(C_1\text{-}C_6)$alkylamino, di-$(C_1\text{-}C_6)$alkylamino and $CO(C_1\text{-}C_6)$alkyl;

R^{11a} is aryl unsubstituted or substituted by one or more radicals selected from the group consisting of $(C_1\text{-}C_6)$alkyl, $(C_1\text{-}C_6)$haloalkyl, halogen, $(C_1\text{-}C_6)$alkoxy, $(C_1\text{-}C_6)$haloalkoxy, $S(O)_nR^{12}$, CN, $CO_2(C_1\text{-}C_6)$alkyl, CO_2H, NO_2, OH, amino, $(C_1\text{-}C_6)$alkylamino and di-$(C_1\text{-}C_6)$alkylamino;

R^{12} is $(C_1\text{-}C_6)$alkyl or $(C_1\text{-}C_6)$haloalkyl;

X is O, S, NR^{13} or NOR^{13};

R^{13} is H, $(C_1\text{-}C_8)$alkyl, $(C_3\text{-}C_6)$alkenyl, $(C_3\text{-}C_6)$alkynyl or $(C_3\text{-}C_8)$cycloalkyl <u>wherein any available carbon on R^{13} can be</u> ~~which last four mentioned groups are~~ unsubstituted or substituted by one or more R^8 groups; or

<u>R^{13}</u> is $(C_3\text{-}C_8)$cycloalkyl-$(C_1\text{-}C_6)$alkyl- which cycloalkyl is unsubstituted or substituted by one or more $(C_1\text{-}C_6)$alkyl, $(C_1\text{-}C_6)$haloalkyl or R^8 groups; or

<u>R^{13}</u> is $-(CR^9R^{10})_pR^{11}$ or $-(CR^9R^{10})_p$heterocyclyl;

m, s and u are each independently 0 or 1;

n is 0, 1 or 2;

p is 0, 1, 2 or 3;

r is 0 or an integer from 1 to 6; and each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from the group consisting of N, O and S, and is unsubstituted or substituted by one or more radicals selected from the group consisting of $(C_1\text{-}C_6)$alkyl, $(C_1\text{-}C_6)$haloalkyl, $(C_2\text{-}C_6)$alkenyl, $(C_2\text{-}C_6)$alkynyl, $\text{-}(CH_2)_uR^{11a}$, halogen, $(C_1\text{-}C_6)$alkoxy, $(C_1\text{-}C_6)$haloalkoxy, $S(O)_nR^{12}$, CN, $CO_2(C_1\text{-}C_6)$alkyl, NO_2, OH, amino, $(C_1\text{-}C_6)$alkylamino and ~~di-$(C_1\text{-}C_6)$alkylamino;~~ di-$(C_1\text{-}C_6)$alkylamino.

~~or a pesticidally acceptable salt thereof.~~

2. (Original) A compound or a salt thereof as claimed in claim 1, wherein W is CF_3.

3. (Original) A compound or a salt thereof as claimed in claim 1 or 2, wherein Z is CH.

4. (Currently amended) A compound or a salt thereof as claimed in claim 1, ~~2 or 3,~~ wherein R^1 and R^6 are each independently selected from the group consisting of H, $(C_1\text{-}C_8)$alkyl, $(C_3\text{-}C_6)$alkenyl, ~~$CO(C_1\text{-}C_6)$alkyl or $SO_2(C_1\text{-}C_6)$alkyl; or are $(CR^9R^{10})_pR^{11}$~~ $CO(C_1\text{-}C_6)$alkyl, $SO_2(C_1\text{-}C_6)$alkyl, and $\text{-}(CR^9R^{10})_pR^{11}$.

5. (Currently amended) A compound or a salt thereof as claimed in ~~any one of claims 1 to 4~~ claim 1, wherein R^2, R^3, R^4 and R^5 are each independently selected from the group consisting of H, $(C_1$-$C_8)$alkyl, $(C_3$-$C_6)$alkenyl, $(C_3$-$C_6)$alkynyl, $-(CR^9R^{10})_pR^{11}$, $-(CR^9R^{10})_p$heterocyclyl ~~or $O(CH_2)_rR^{11}$~~ and $O(CH_2)_rR^{11}$; or R^2 and R^3 together with the attached carbon atom form a carbonyl or thiocarbonyl group, or an imino group which is unsubstituted or substituted by $(C_1$-$C_6)$alkyl, $CO(C_1$-$C_6)$alkyl or R^{11a}; or R^2 and R^3, or R^4 and R^5 together with the respective attached carbon atom form a $(C_3$-$C_8)$cycloalkyl ring.

6. (Currently amended) A compound or a salt thereof as claimed in ~~any one of claims 1 to 5~~ claim 1 wherein:

W is CF_3;

Z is CH;

R^1 and R^6 are each independently selected from the group consisting of H, $(C_1$-$C_8)$alkyl, $(C_3$-$C_6)$alkenyl, ~~$CO(C_1$-$C_6)$alkyl or $SO_2(C_1$-$C_6)$alkyl; or are~~ $CO(C_1$-$C_6)$alkyl, $SO_2(C_1$-$C_6)$alkyl and $-(CR^9R^{10})_pR^{11}$;

R^2, R^3, R^4 and R^5 are each independently selected from the group consisting of H, $(C_1$-$C_8)$alkyl, $(C_3$-$C_6)$alkenyl, $(C_3$-$C_6)$alkynyl, $-(CR^9R^{10})_pR^{11}$, $-(CR^9R^{10})_p$heterocyclyl [[or]] and $O(CH_2)_rR^{11}$; or R^2 and R^3 together with the attached carbon atom form a carbonyl or thiocarbonyl group, or an imino group which is unsubstituted or substituted by $(C_1$-$C_6)$alkyl, $CO(C_1$-$C_6)$alkyl or R^{11a}; or R^2 and R^3, or R^4 and R^5 together with the respective attached carbon atom form a $(C_3$-$C_8)$cycloalkyl ring;

R^7 is $(C_1$-$C_8)$alkyl, $(C_3$-$C_6)$alkenyl, $(C_3$-$C_6)$alkynyl, $-(CR^9R^{10})_pR^{11}$ or $-(CR^9R^{10})_p$heterocyclyl;

R^8 is $(C_1\text{-}C_4)$alkoxy or OH;

R^9 and R^{10} are each independently selected from the group consisting of H, $(C_1\text{-}C_4)$alkyl [[or]] and $(C_1\text{-}C_4)$haloalkyl;

R^{11} is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$haloalkyl, $(C_2\text{-}C_4)$alkenyl, $(C_2\text{-}C_4)$alkynyl, $(C_3\text{-}C_6)$cycloalkyl, $-(CH_2)_uR^{11a}$, heterocyclyl, halogen, $(C_1\text{-}C_4)$alkoxy, $(C_1\text{-}C_4)$haloalkoxy, $S(O)_nR^{12}$, CN, $CO_2(C_1\text{-}C_4)$alkyl, NO_2, amino, $(C_1\text{-}C_4)$alkylamino and di-$(C_1\text{-}C_4)$alkylamino; ~~(more preferably R^{11} is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of $(C_1\text{-}C_4)$alkyl, halogen, $(C_1\text{-}C_4)$alkoxy, NO_2 and amino);~~

R^{11a} is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$haloalkyl, halogen, $(C_1\text{-}C_4)$alkoxy, $(C_1\text{-}C_4)$haloalkoxy, $S(O)_nR^{12}$, CN, $CO_2(C_1\text{-}C_4)$alkyl, CO_2H, NO_2, OH, amino, $(C_1\text{-}C_4)$alkylamino and di-$(C_1\text{-}C_4)$alkylamino;

R^{12} is $(C_1\text{-}C_4)$alkyl or $(C_1\text{-}C_4)$haloalkyl;

X is O or S;

m is 0; and

p, r, s and u are each independently 0 or 1; [[and]]

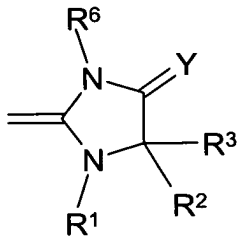
wherein each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S.

7. (Currently amended) A compound or a salt thereof as claimed in ~~any one of claims 1 to 6~~ claim 1 wherein:

W is CF_3;

Z is CH;

=Q is a group of formula (A1):



(A1)

R^1 and R^6 are each independently selected from the group consisting of H, $(C_1$-$C_8)$alkyl, $(C_3$-$C_6)$alkenyl, ~~$CO(C_1$-$C_6)$alkyl or $SO_2(C_1$-$C_6)$alkyl; or are~~ $CO(C_1$-$C_6)$alkyl, $SO_2(C_1$-$C_6)$alkyl and $-(CR^9R^{10})_pR^{11}$;

R^2 and R^3 are each independently selected from the group consisting of H, $(C_1$-$C_8)$alkyl, $(C_3$-$C_6)$alkenyl, $(C_3$-$C_6)$alkynyl, $-(CR^9R^{10})_pR^{11}$, $-(CR^9R^{10})_p$heterocyclyl [[or]] and $O(CH_2)_rR^{11}$; and

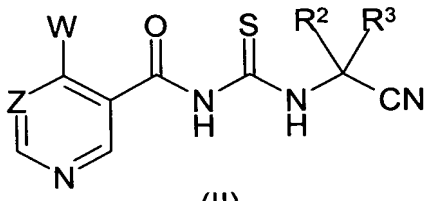
Y is O or S; [[and]]

wherein said heterocyclyl is a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S.

8. (Currently amended) A process for the preparation of a compound of formula (I) or a salt thereof as defined in ~~any one of claims 1 to 7~~ claim 1, which process comprises:

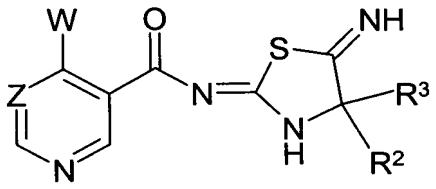
a) ~~where =Q is a formula (A), R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl, thiocarbonyl or imino group, R^4 and R^5 together with the attached carbon atom form a thiocarbonyl group, R^1~~

~~and R^6 are each a hydrogen atom and m is zero,~~ the cyclisation-rearrangement reaction of a compound of formula (II):



(II)

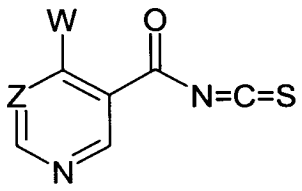
wherein W and Z are as defined in claim 1, R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl, thiocarbonyl or imino group, by heating and/or reaction in the presence of a base, via an intermediate of formula (III):



(III)

wherein W, Z, R^2 and R^3 are as defined in claim 1, which rearranges to the compound of formula (I), where =Q is a formula (A), R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl, thiocarbonyl or imino group, R^4 and R^5 together with the attached carbon atom form a thiocarbonyl group, R^1 and R^6 are each a hydrogen atom and m is zero; or

b) ~~where W and Z are as defined in claim 1, =Q is a formula (A), R^2 and R^3 are as defined in claim 1 excluding where they form a carbonyl, thiocarbonyl or imino group, R^4 and R^5 together with the attached carbon atom form a thiocarbonyl group, R^1 and R^6 are each a hydrogen atom and m is zero,~~ reacting a compound of formula (IV):



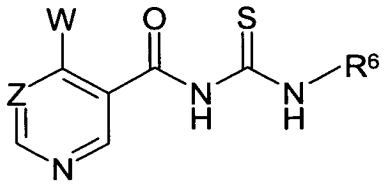
(IV)

wherein W and Z are as defined in claim 1, with a compound of formula (V):

$$H_2NCR^2(R^3)CN \qquad (V)$$

wherein R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl, thiocarbonyl or imino group, to give the corresponding compound of formula (II), followed by cyclisation and rearrangement as described in process a) above to give a compound of formula (I) where W and Z are as defined in claim 1, =Q is a formula (A), R^2 and R^3 are as defined in claim 1 excluding where they form a carbonyl, thiocarbonyl or imino group, R^4 and R^5 together with the attached carbon atom form a thiocarbonyl group, R^1 and R^6 are each a hydrogen atom and m is zero; or

c) ~~where =Q is a formula (A), R^1 is a hydrogen atom, R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl, thiocarbonyl or imino group, R^4 and R^5 together with the attached carbon atom form a carbonyl group, W, Z and R^6 are as defined in claim 1 and m is zero,~~ reacting a compound of formula (VI):

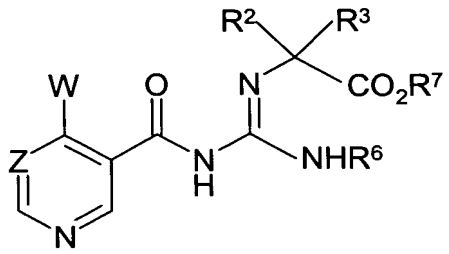


(VI)

wherein W, Z and R^6 are as defined in claim 1, with a compound of formula (VII):

$H_2NCR^2(R^3)CO_2R^7$ (VII)

wherein R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl, thiocarbonyl or imino group, and R^7 is a leaving group, in the presence of a coupling agent to give an intermediate compound of formula (VIII):

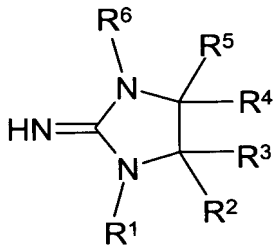


(VIII)

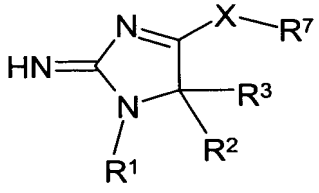
wherein the various symbols are as defined above, followed by cyclisation to give a compound of formula (I) where =Q is a formula (A), R^1 is a hydrogen atom, R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl, thiocarbonyl or imino group, R^4 and R^5 together with the attached carbon atom form a carbonyl group, W, Z and R^6 are as defined in claim 1 and m is zero;

or

d) ~~where =Q is a formula (A) or (B), m is zero and the other symbols are as defined in claim 1,~~ acylating the corresponding compound of formula (A^1) or (B^1):

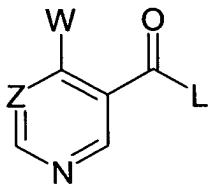


(A^1)



(B^1)

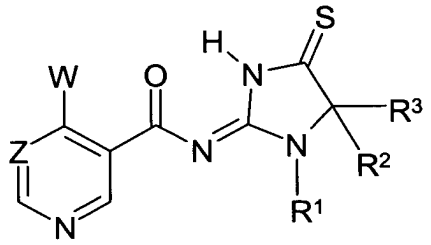
wherein the various symbols are as defined in claim 1, with a compound of formula (IX):



(IX)

wherein W and Z are as defined in claim 1 and L is a leaving group to give a compound of formula (I) where =Q is a formula (A) or (B), m is zero and the other symbols are as defined in claim 1; or

e) ~~where =Q is a formula (B), W, Z, R^1 and R^7 are as defined in claim 1, X is S, m is zero, and R^2 and R^3 are as defined in claim 1 excluding where together with the attached carbon atom they form a carbonyl or thiocarbonyl group, or an imino group which is unsubstituted or substituted by (C_1-C_6)alkyl, CO(C_1-C_6)alkyl or R^{11a},~~ reacting a compound of formula (I) which is of formula (X):



(X)

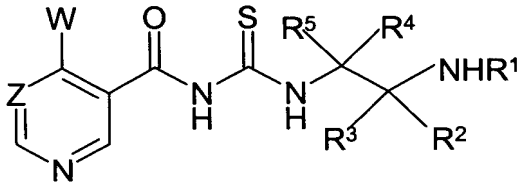
wherein W, Z, ~~R1, R^2 and R^3~~ R^1, R^2 and R^3 are as defined in claim 1, with a compound of formula (XI):

$$R^7L \qquad (XI)$$

wherein R^7 is as defined in claim 1 and L is a leaving group to give a compound of formula (I) where =Q is a formula (B), W, Z, R^1 and R^7 are as defined in claim 1, X is S, m is zero, and R^2 and R^3 are as defined in claim 1 excluding where together with the

attached carbon atom they form a carbonyl or thiocarbonyl group, or an imino group which is unsubstituted or substituted by $(C_1\text{-}C_6)$alkyl, $CO(C_1\text{-}C_6)$alkyl or R^{11a}; or

f) ~~where =Q is a formula (A), W, Z, R^1, R^2, R^3, R^4 and R^5 are as defined in claim 1, R^6 is hydrogen and m is zero,~~ cyclising a compound of formula (XII):



(XII)

wherein W, Z, R^1, R^2, R^3, R^4 and R^5 are as defined in claim 1, in the presence of a base to give a compound of formula (I) where =Q is a formula (A), W, Z, R^1, R^2, R^3, R^4 and R^5 are as defined in claim 1, R^6 is hydrogen and m is zero; or

g) ~~where =Q is a formula (A), W, Z, R^1, R^2 and R^3 are as defined in claim 1, R^4 and R^5 together with the attached carbon atom form a carbonyl group, R^6 is hydrogen, and m is zero,~~ oxidising and hydrolysing a compound of formula (I) wherein Q is a group of formula (B), X is S, and W, Z, R^1, R^2, R^3 and R^7 are as defined in claim 1, and m is zero to give a compound of formula (I) where =Q is a formula (A), W, Z, R^1, R^2 and R^3 are as defined in claim 1, R^4 and R^5 together with the attached carbon atom form a carbonyl group, R^6 is hydrogen, and m is zero; or

h) ~~where =Q is a formula (B), W, Z, R^2, R^3 and R^7 are as defined in claim 1, R^1 is $CO(C_1\text{-}C_6)$alkyl which is unsubstituted or substituted by one or more R^8 groups, or is COR^{11a} or CO heterocyclyl, and m is zero,~~ acylating the corresponding compound of formula (I) wherein R^1 is hydrogen, using a compound of formula (XIII):

$$R^1COL \qquad \text{(XIII)}$$

wherein L is a leaving group to give a compound of formula (I) where =Q is a formula (B), W, Z, R^2, R^3 and R^7 are as defined in claim 1, R^1 is $CO(C_1$-$C_6)$alkyl which is unsubstituted or substituted by one or more R^8 groups, or is COR^{11a} or CO-heterocyclyl, and m is zero; or

i) ~~where=Q is a group of formula (A), W, Z, R^2, R^3, R^4, R^5 and R^6 are as defined in claim 1, R^1 is $CO(C_1$-$C_6)$alkyl which is unsubstituted or substituted by one or more R^8 groups, or is COR^{11a} or CO-heterocyclyl, and m is zero,~~ acylating the corresponding compound of formula (I) wherein R^1 is hydrogen, using a compound of formula (XIII) as defined above to give a compound of formula (I) where =Q is a group of formula (A), W, Z, R^2, R^3, R^4, R^5 and R^6 are as defined in claim 1, R^1 is $CO(C_1$-$C_6)$alkyl which is unsubstituted or substituted by one or more R^8 groups, or is COR^{11a} or CO-heterocyclyl, and m is zero; or

j) ~~where Q is as defined in claim 1, and m is 1,~~ oxidising a corresponding compound of formula (I) in which m is 0 to give a compound of formula (I) where Q is as defined in claim 1, and m is 1; and

~~if desired~~ optionally, converting a resulting compound of formula (I) into a pesticidally acceptable salt thereof.

9. (Currently amended) A pesticidal composition comprising a compound of formula (I) or a pesticidally acceptable salt thereof as defined in ~~any one of claims 1 to 7~~ claim 1, ~~in association with~~ and a pesticidally acceptable diluent or carrier and/or surface active agent.

10. (Cancelled)

11. (New) The compound of claim 6, wherein R^{11} is phenyl substituted unsubstituted or substituted by one or more radicals selected from the group consisting of $(C_1\text{-}C_4)$alkyl, halogen, $(C_1\text{-}C_4)$alkoxy, NO_2 and amino.